

GTCAAGGAAGAGGTACCTGGTGTCCATCAAGGTGCAGTCGGCCGGCATGACCAGTG  
AGGTGGTTGAAGATAGCACCATCACCATGATAGACCGCCCGCCTCAACCGCCTCCA  
CACATCCGTGTGAATGAAAAGGATGTGCTAATCAGCAAATCTTCCATCAACTTTACT  
GTCAACTGCAGCTGGTTCAGCGACACCAACGGAGCGGTTGGGTACTTTGCTGTGGTG  
GTGAGAGAGGCCGACAGCATGGATGAGTTGAAGCCAGAACAGCAGCACCCTCTCCC  
TTCCTACCTGGAGTACAGACACAACGCCTCCATCCGAGTCTACCAGACCAATTATTT  
TGCCAGCAAATGTGCTGAAAGTCCCGACAGCAGTTCTAAAAGTTTCAACATTAAGCT  
TGGAGCAGAGATGGACAGCCTCGGTGGCAAATGTGATCCCAGTCAGCAGAAATTCT  
GTGATGGACCGCTGTTGCCACACACCGCCTACAGAATCAGCATCCGGGCTTTTACAC  
AGCTATTTGACGAGGACTTGAAAGAGTTACCAAACCTCTCTACTCGGATACGTTCT  
TCTCTATGCCCATCACCACAGAGTCAGAGCCCTTGTTTGGAGTTATTGAAGGTGTGA  
GTGCTGGCCTGTTTCTAATTGGCATGCTGGTGGCCCTTGTTGCCTTCTTCATCTGCAG  
ACAGAAAGCTAGCCACAGCAGGGAAAGGCCATCTGCCCGGCTCAGCATTTCGTAGGG  
ACCGGCCTTTGTCTGTCCATCTGAATCTGGGCCAGAAAGGCAACCGGAAAACCTTCTT  
GCCCCATAAAGATCAATCAGTTTGAAGGGCATTTCATGAAGCTGCAGGCAGACTCC  
AACTACCTTCTATCCAAGGAATATGAGGACTTAAAAGACGTGGGTAGAAGCCAGTC  
ATGTGACATTGCCCTCTTGCCTGAGAATCGAGGGAAAAATCGATACAACAACATATT  
GCCTTATGATGCCTCAAGAGTGAAGCTCTCGAATGTCGATGACGACCCTTGCTCTGA  
CTACATCAACGCCAGCTACATCCCCGGTAACAACCTTCAGACGAGAATACATCGCCA  
CTCAGGGACCGCTTCCAGGCACCAAGGATGACTTCTGGAAGATGGCGTGGGAGCAG  
AACGTTCAACATCGTCATGGTGACCCAGTGTGTTGAAAAGGGCCGAGTGAAGTG  
TGACCATTACTGGCCAGCAGACCAGGACCCCCTCTACTACGGTGATCTCATCCTACA  
GATGGTCTCGGAGTCCGTGCTCCCCGAGTGGACCATCAGGGAGTTTAAGATATGCAG  
TGAAGAACAGTTGGATGCACACAGACTCATCCGTCACCTTCACTACACGGTGTGGCC  
AGACCATGGGGTCCCAGAGACCACCCAGTCCCTGATCCAATTTGTGAGGACAGTCA  
GGGACTACATCAACAGAAGCCCCGGGGCTGGGCCCTCCGTAGTGCAGTGCAGCGCT  
GGTGTGGGCAGAACAGGGACGTTGTTGCCCTGGACCGGATCCTCCAGCAGTTGGA  
CTCTAAGGACTCCGTGGACATTTATGGGGCAGTGCATGACCTAAGACTCCACAGGGT  
TCACATGGTCCAGACCGAGTGTCAATATGTGTATCTGCATCAGTGTGTAAGAGACGT  
CTCAGAGCAAAGAACTGCGGAAACGAGCAAGAGAAAGGGGGTGTTCGATTTATG  
AGAATGTGAATCAGAGTATCACAGAGATGCAATCTACTCGAGACATTAAGAATTC  
(SEQ ID NO:1)

**FIGURE 1**

underlined = deleted in targeting construct

[ ] = sequence flanking Neo insert in targeting construct

[GTCAAGGAAGAGGTACCTGGTGTCCATCAAGGTGCAGTCG] GCCGGCATGACCAGTGAGGT  
 GGTGAAGATAGCACCATCACCATGATAGACCGCCCGCCTCAACCGCCTCCACACATCCG  
 TGTGAATGAAAAGGATGTGCTAATCAGCAAATCTTCCATCAACTTTACTGTCAACTGCAG  
 CTGGTTCAGCGACACCAACGGAGCGGTTGGGTACTTTGCTGTGGTGGTGAGAGAGGCCGA  
 CAGCAT [GGATGAGTTGAAGCCAGAACAGCAGCACCCTCTCCCTTCCTACCTGGAGTACAG  
 ACACAACGCCTCCATCCGAGTCTACCAGACCAATTATTTGCCAGCAAATGTGCTGAAAG  
 TCCCGACAGCAGTTCTAAAAGTTTCAACATTAAGCTTGGAGCAGAGATGGACAGCCTCGG  
 TGGCAAATGTGATCCCGAGTCAGCAGAAATTCTGTGATGGACCGCTGTTGCCACACACCGC  
 CTACAG] AATCAGCATCCGGGCTTTTACACAGCTATTTGACGAGGACTTGAAAGAGTTTAC  
 CAAACCTCTCTACTCGGATACGTTCTTCTCTATGCCCATCACCACAGAGTCAGAGCCCTT  
 GTTTGGAGTTATTGAAGGTGTGAGTGCTGGCCTGTTTCTAATTGGCATGCTGGTGGCCCT  
 TGTTGCCCTTCTTCATCTGCAGACAGAAAGCTAGCCACAGCAGGGAAAGGCCATCTGCCCG  
 GCTCAGCATTCTGATGGGACCGGCCCTTTGTCTGTCCATCTGAATCTGGGCCAGAAAGGCAA  
 CCGGAAAACCTTCTTGCCCCATAAAGATCAATCAGTTTGAAGGGCATTTCATGAAGCTGCA  
 GGCAGACTCCAACCTACCTTCTATCCAAGGAATATGAGGACTTAAAAGACGTGGGTAGAAG  
 CCAGTCATGTGACATTGCCCTCTTGCCCTGAGAATCGAGGGAAAAATCGATACAACAACAT  
 ATTGCCCTTATGATGCCTCAAGAGTGAAGCTCTCGAATGTGATGACGACCCCTTGCTCTGA  
 CTACATCAACGCCAGCTACATCCCCGGTAACAACCTCAGACGAGAATACATCGCCACTCA  
 GGGACCGCTTCCAGGCACCAAGGATGACTTCTGGAAGATGGCGTGGGAGCAGAACGTTCA  
 CAACATCGTCATGGTGACCCAGTGTGTTGAAAAGGGCCGAGTGAAGTGTGACCATTACTG  
 GCCAGCAGACCAGGACCCCTCTACTACGGTGATCTCATCCTACAGATGGTCTCGGAGTC  
 CGTGCTCCCCGAGTGGACCATCAGGGAGTTTAAAGATATGCAGTGAAGAACAGTTGGATGC  
 ACACAGACTCATCCGTCACCTTCTACTACACGGTGTGGCCAGACCATGGGGTCCCAGAGAC  
 CACCCAGTCCCTGATCCAATTTGTGAGGACAGTCAGGGACTACATCAACAGAAGCCCCGG  
 GGCTGGGCCCTCCGTAGTGCACTGCAGCGCTGGTGTGGGCAGAACAGGGACGTTCTGTTGC  
 CCTGGACCGGATCCTCCAGCAGTTGGACTCTAAGGACTCCGTGGACATTTATGGGGCAGT  
 GCATGACCTAAGACTCCACAGGGTTTACATGGTCCAGACCGAGTGTCAATATGTGTATCT  
 GCATCAGTGTGTAAGAGACGTCTCAGAGCAAAGAACTGCGGAAACGAGCAAGAGAAAGG  
 GGGTGTTCGATTTATGAGAATGTGAATCAGAGTATCACAGAGATGCAATCTACTCGAGA  
 CATTAAGAATTC

**FIGURE 2A**

### Gene Sequence Structure \*

41 bp

Sequence Deleted

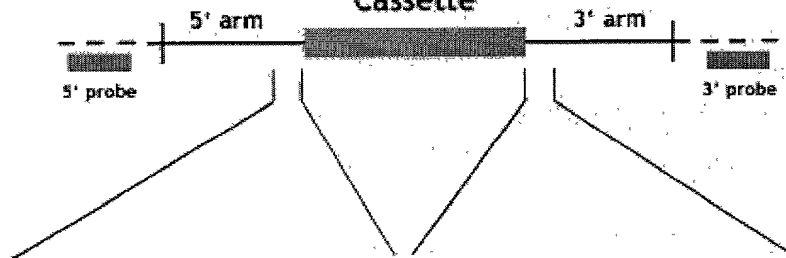
246 bp

Size of partial cDNA: 1752 bp



### Targeting Vector\* (genomic sequence)

#### LacZ-Neo Cassette



Arm Length:  
5': 0.7 kb  
3': 2.5 kb

5'>GCCGCCCCCAGAACTCCACGG  
CCATTGCCTGCTCTTGGATACCTC  
CTGACTCCGACTTTTGATGGCTACA  
GCATTGAGTGCCGAAAAATGGATA  
CCCAAGAAATCGAGTTTTCAGAA  
AGCTGGAGAAAGAAAAATCACTGC  
TCAACATCATGATGTTAGTACCTC  
ATAAGAGGTACCTGGTGTCATCA  
AGGTGCAGTCG<3'  
(SEQ ID NO:2)

5'>GGATGAGTTGAAGCCAGAACA  
GCAGCACCTCTCCCTTCCTACCT  
GGAGTACAGACACAACGCCTCCAT  
CCGAGTCTACCAGACCAATTATTT  
TGCCAGCAAATGTGCTGAAAGTCC  
CGACAGCAGTTCTAAAAGTTTCAA  
CATTAAAGCTTGGAGCAGAGATGGA  
CAGCCTCGGTGGCAAATGTGATCC  
CAGTCAGCAGA<3'  
(SEQ ID NO:3)

— Targeting Vector  
- - - Endogenous Locus

\* Not drawn to scale

FIGURE 2B